CLAIMS

What is claimed is:

1. A method for transferring data in a wireless communication system, comprising the steps of:

allowing a first component to carry a first data stream running at a first frequency;

allowing a second component to carry a second data stream running at a second frequency;

transferring the second data stream from the second component through the first component, which combines the first data stream and the second data stream to form a third data stream running at a third frequency, which is the sum of the first frequency and the second frequency; and

sending the third data stream to a third component.

2. The method of claim 1 wherein the wireless communication system uses the technology selected from a group consisting of the code-division multiple access, the time-division multiple access, and the global system for mobile communications.

3. The method of claim 1 wherein each of the first component and the second component is a radio-frequency sub unit, and the third component is a baseband unit; the first component, the second component, and the third component are for use in an access point of the wireless communication system.

4. The method of claim 1 wherein the wireless communication system is connected to an electronic network.

5. The method of claim 1 wherein the first and the second data stream are transformed from a fourth and a fifth data stream received from a first antenna and a second antenna, respectively.

6. The method of claim 1 wherein the second component is removably connected to the first component.

7. The method of claim 1 wherein the first component is removably connected to the third component.

8. The method of claim 1 wherein each of the first component and the second component is a radio-frequency sub unit being part of a radio-frequency unit, and the third component is adaptable to a plurality of the radio-frequency units.

9. The method of claim 1 wherein the first frequency and the second frequency are substantially the same.

10. The method of claim 1 wherein

each of the first component and the second component is a radio-frequency sub unit of a radio-frequency unit, and

the maximum frequency allowable at a line connecting the radio frequency unit to the third component determines the maximum number of the radio-frequency sub units connected as a daisy chain in the radio-frequency unit.

11. The method of claim 1 wherein sending the third data stream to the third component is via a connecting point between the first component and the third component; the connecting point is also for use in sending data from the third component to the first component.

12. The method of claim 1 further comprising the step of the third component separating the third data stream into the first data stream and the second data stream.

13. A method for transferring data in a wireless communication system, comprising the steps of:

providing a first data stream running at a first frequency to be carried by a first component;

providing a second data stream running at a second frequency to be carried by a second component;

a third component combining the first data stream and the second data stream to form a third data stream running at a third frequency being the sum of the first frequency and the second frequency; and

transferring the third data stream from the third component through the first component, which separates the third data stream into the first data stream and the second data stream, then sends the second data stream to the second component.

14. The method of claim 13 wherein the wireless communication system uses the technology selected from a group consisting of the code-division multiple access, the time-division multiple access, and the global system for mobile communications.

15. The method of claim 13 wherein each of the first component and the second component is a radio-frequency sub unit, and the third component is a baseband unit; the first component, the second component, and the third component are for use in an access point of the wireless communication system.

16. The method of claim 13 wherein the wireless communication system is connected to an electronic network.

17. The method of claim 13 wherein the first and the second data stream are transformed into a fourth and a fifth data stream to be sent through a first antenna and a second antenna, respectively.

18. The method of claim 13 wherein the second component is removably connected to the first component.

19. The method of claim 13 wherein the first component is removably connected to the third component.

20. The method of claim 13 wherein each of the first component and the second component is a radio-frequency sub unit being part of a radio-frequency unit, and the third component is adaptable to a plurality of the radio-frequency units.

21. The method of claim 13 wherein the first frequency and the second frequency are substantially the same.

22. The method of claim 13 wherein

each of the first component and the second component is a radio-frequency sub unit of a radio-frequency unit, and

the maximum frequency allowable at a line connecting the radio-frequency unit to the third component determines the maximum number of the radio-frequency sub units connected as a daisy chain in the radio-frequency unit.

23. The method of claim 13 wherein transferring the third data stream from third component is via a connecting point between the first component and the third component; the connecting point is also for use in receiving data from the first component to the third component.

24. An access point for use in a wireless communication system, comprising:

at least one radio-frequency unit connected via a connecting point to a baseband unit; wherein

the radio-frequency unit having a plurality of sub units connected as a daisy chain, including a first sub unit and a second sub unit;

the first sub unit carries a first data stream running at a first frequency;

the second sub unit carries a second data stream running at a second frequency; and

in a receiving mode, the first sub unit combines the first data stream and the second data stream received from the second unit to form a third data stream running at a third frequency, which is the sum of the first frequency and the second frequency.

25. The access point of claim 24 wherein a sub unit of the at least one radio-frequency unit is connected to at least one antenna through which a stream of data is received.

26. The access point of claim 24 wherein a radio-frequency unit of the least one radio-frequency unit is removably connected to the baseband unit.

27. The access point of claim 24 wherein the connecting point is for use in both the receiving mode and a transmitting mode of the access point.

28. The access point of claim 24 wherein the baseband unit separates the third data stream into the first data stream and the second data stream.

29. An access point for use in a wireless communication system, comprising:

at least one radio-frequency unit connected via a connecting point to a baseband unit; wherein

a radio-frequency unit having a plurality of sub units connected as a daisy chain, including a first sub unit to carry a first data stream running at a first frequency and a second sub unit to carry a second data stream running at a second frequency; and

in a transmitting mode, the baseband unit combines the first data stream and the second data stream to form a third data stream running at a third frequency being the sum of the first frequency and the second frequency; the baseband unit transfers the third data stream to the first sub unit , which separates the third data stream into the first and the second data stream, then sends the second data stream to the second component.

30. The access point of claim 29 wherein a sub unit of the at least one radio-frequency unit is connected to at least one antenna through which a stream of data is received.

31. The access point of claim 29 wherein a radio-frequency unit of the least one radio-frequency unit is removably connected to the baseband unit.

32. The access point of claim 29 wherein the connecting point is for use in both the transmitting mode and a receiving mode of the access point.

33. A unit for use in a wireless communication system, comprising:

L number of sub units connected as a daisy chain;

wherein L is an integer number, each sub unit carries a data stream D'' running at a frequency F'', and if an integer I does not equal to L, then, in a receiving mode,

the Ith sub unit of the daisy chain carries a data stream D''(I) running at a F''(I) frequency;

the Ith sub unit receives a data stream D'(I+1) running at a frequency F'(I+1), from the (I+1)th sub unit; and

the Ith sub unit combines the data stream D''(I) and the data stream D'(I+1) to form the data stream D'(I) running at a frequency F'(I), which is the sum of the frequency F''(I) and the frequency F'(I+1).

34. The unit of claim 33 wherein a baseband unit receives a data stream D'(1) of the first sub unit in the daisy chain; the data stream D'(1) includes the data D'' of all the sub units in the daisy chain; the data stream D'(1) runs at a frequency F'(1), which is the sum of all frequency F'' of all of the data D''.

35. The unit of claim 33 being connected to a baseband chip via a connecting point, which is for use in both the receiving mode and a transmitting mode of the unit.

36. A unit for use in a wireless communication system, comprising:

L number of sub units connected as a daisy chain;

wherein L is an integer number, each sub unit carries a data stream D'' running at a frequency F'', and if an integer I does not equal to L, then, in a transmitting mode,

the Ith sub unit of the daisy chain carries a data stream D''(I) running at a F''(I) frequency;

the Ith sub unit receives a data stream D'(I) running at a frequency F'(I);

the Ith sub unit separates the data stream D'(I) into the data stream D''(I) and a data stream D'(I+1) running at a frequency F'(I+1); and

the Ith sub unit sends the data stream D'(I+1) to the (I+1)th sub unit;

wherein the frequency F'(I) is the sum of the frequency F''(I) and the frequency F'(I+1).

37. The unit of claim 36 wherein a baseband unit sends a data stream D'(1) of the first sub unit in the daisy chain; the data stream D'(1) includes the data D'' of all the sub units in the daisy chain; the data stream D'(1) runs at a frequency F'(1), which is the sum of all frequency F'' of all the data D''.

38. The unit of claim 36 being connected to a baseband chip via a connecting point, which is for use in both the transmitting mode and a receiving mode of the unit.